

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A reduced mask process for forming a fast recovery diode comprising the steps of forming a field oxide body atop a silicon surface of a semiconductor die; applying a first mask to said ~~top surface of said~~ field oxide body and etching a large area window ~~in the center thereof and therein exposing a portion of said surface of said die and leaving an outer oxide termination ring around said exposed portion; diffusing impurity atoms through said window to define~~ defining a large area P/N junction ~~in said die below said exposed portion;~~ applying a second mask to ~~said surface and~~ etching a window therein to clear said ~~central area~~ exposed portion for the application of an anode contact; evaporating platinum metal on ~~the back~~ an opposing surface of said die and heating said die to drive platinum atoms into said die; depositing metal atop ~~said top surface of said die and to the top of the P/N junction~~ said exposed portion and over the oxide termination ring; and applying a third mask to ~~said top surface and~~ opening windows to etch said metal to define an anode contact which overlies said exposed portion and the inner periphery of said termination ring and a separate EQR ring which overlies the outer periphery of said termination ring.
2. (Original) The process of claim 1, wherein said platinum metal has a thickness of about 10Å and is driven at about 950°C for about 30 minutes.
3. (Currently Amended) The process of claim 1, which includes the further step of depositing an amorphous silicon layer atop ~~said die surface~~ anode contact and said EQR ring, and a further mask step for removing said amorphous silicon from ~~atop the active P/N junction area and leaving it atop and in contact with said field plate and said EQR ring~~ said anode contact overlying said exposed portion, and leaving said amorphous silicon over said EQR ring and the portion of said anode contact overlying said inner periphery of said oxide termination ring.

4. (Currently Amended) The process of claim 2, which includes the further step of depositing an amorphous silicon layer atop said ~~die surface~~ anode contact and said EQR ring, and a further mask step for clearing said amorphous silicon from ~~atop the active P/N junction area and leaving it atop and in contact with said field plate and said EQR ring~~ said anode contact overlying said exposed portion, and leaving said amorphous silicon over said EQR ring and the portion of said anode contact overlying said inner periphery of said oxide termination ring.

5. (Currently Amended) The process of claim 4, which includes a further mask step for defining a plurality of spaced floating guard ring diffusions in ~~said upper surface of said die which are spaced between said field plate and an adjacent outer field plate~~ under said outer oxide termination ring.

6. (New) A reduced mask process for forming a fast recovery diode comprising the steps of forming a field oxide body atop a surface of a semiconductor die; applying a first mask to said field oxide body and etching a large area window therein exposing a portion of said surface of said die and leaving an outer oxide termination ring around said exposed portion; defining a large area P/N junction in said die below said exposed portion; applying a second mask to clear said exposed portion for the application of an anode contact; evaporating platinum metal on an opposing surface of said die and heating said die to drive platinum atoms into said die; depositing metal atop said exposed portion and over the oxide termination ring; and applying a third mask to etch said metal to define an anode contact which overlies said exposed portion and the inner periphery of said termination ring and a separate EQR ring which overlies the outer periphery of said termination ring; and depositing an amorphous silicon layer atop said anode contact and said EQR ring, and a further mask step for removing said amorphous silicon from said anode contact overlying said exposed portion, and leaving said amorphous silicon over said EQR ring and the portion of said anode contact overlying said inner periphery of said oxide termination ring.